DOCUMENT RESUME

ED 060 922 24 LI 003 628

AUTHOR Fry, Bernard M.
TITLE Evaluation Study of ERIC Products and Services. Summary Volume. Final Report.
INSTITUTION Indiana Univ., Bloomington. Graduate Library School.
SPONS AGENCY National Center for Educational Communication (DHEW/OE), Washington, D.C.
BUREAU NO BR-0-0375
PUB DATE Mar 72
GRANT OEG-0-70-3271
NOTE 51p.; (2 References)

EDRS PRICE MF-$0.65 HC-$3.29
DESCRIPTORS *Educational Resources; *Evaluation; Information Centers; Information Networks; Information Processing; *Information Services; *Information Systems; Surveys; *Use Studies
IDENTIFIERS *Educational Resources Information Center; ERIC

ABSTRACT

The purpose of this study was to examine the use made of the Educational Resources Information Center (ERIC) products and services by members of the educational community, and in this context to evaluate the extent to which the ERIC system is achieving its objectives of guaranteeing ready access to the nation's current significant literature in the field of education. The report is prepared in four volumes and a summary volume. This, the summary volume, contains the introduction and summary of findings and recommendations. The findings presented in the summary are designed to call attention to conditions, trends, and issues concerning use and user reactions to ERIC products and services. The purpose is to provide a concise, analytical basis on which to evaluate the extent to which ERIC has met its goals, and to identify deficiencies and weaknesses. The recommendations presented in Part II of Chapter 2 propose needed improvements and courses of action to correct deficiencies identified by this study. (The other four volumes of this study are available as LI 003629 through 003632). (Author/NH)

ED 060922

PA-24

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

FINAL REPORT

Project No. BR 00375
Grant No. OEC-0-70-3271

Evaluation Study of ERIC Products and Services

Complete in Four Volumes
Including One Appendix Volume

SUMMARY VOLUME

Bernard M. Fry
Principal Investigator

Graduate Library School
Indiana University
Bloomington, Indiana

LI 003 628

March 1972

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Office of Education
National Center for Educational Communication

EVALUATION STUDY OF ERIC PRODUCTS AND SERVICES

TABLE OF CONTENTS

VOLUME I

Preface

Chapters

1. Introduction (Included in Summary Volume)

2. Summary of Findings and Recommendations (Included in Summary Volume)

3. Characteristics of ERIC Users

4. Goal #1: Making Documents Available
   A. Documents Acquired and Processed
   B. Documents Distribution: Microfiche and Hard Copy
   C. *Thesaurus of ERIC Descriptors*
   D. *RIE* and *RIE Annual Indexes*
   E. *CIJE*
   F. Indexes to Special Collections
   G. Some Comparisons of Index Journals in Education

VOLUME II

Chapters

5. Goal #2: Providing Summary and Interpretive Information; Information Analysis Products, 1967-70

6. Goal #3: Strengthening Dissemination Channels
   A. Overall Dissemination
   B. Use of Professional Journals
   C. Newsletters
   D. Brochures and Audio Visual Materials
   E. Efforts through Professional Organizations

7. Goal #4: Providing a Base for a National Information Network; Development of the Total ERIC System

8. Profiles of Organizations Providing ERIC Services and Products
   Clearinghouses
   Libraries and Information Centers
   USOE Regional Offices
   State Education Agencies
   Reading Resources Network Centers
   USOE Regional Laboratories
   Standing Order Institutions
   Institutions Making Individual Orders

EVALUATION STUDY OF ERIC PRODUCTS AND SERVICES

VOLUME III

Chapters

1. Methodology--Study Design and Conduct

2. Research Instruments

3. Summary of Conclusions and Recommendations of ERIC Study Advisory Panels

4. Anecdotal Information

5. Background
   - ERIC Clearinghouses: Brief Scope Notes
   - Location of ERIC Microfiche Collections
   - Glossary of ERIC Terms
   - Bibliography

VOLUME IV

Supplementary and Parallel Tables--Keyed to Chapters 4-7 of Volumes I and II

PREFACE

Although the literature of the evaluation of document-information transfer systems is voluminous, few evaluations of such systems or services, operational or experimental, have actually been conducted. Evaluation implies quantification but in the field of document-information services there has been a continuing lack of consensus concerning what to measure, how to measure, and how to interpret the results.

It is important to distinquish between evaluation of an operating retrieval system such as the Medical Literature Analysis and Retrieval System (MEDLARS), which is essentially an analytical and diagnostic procedure, and evaluation of ERIC products and services, which employs survey techniques to measure use and user reaction.

The results of this evaluation study are set forth in the four volumes of the final report, the first three of which include the analysis and core data collected. The fourth volume contains supplementary and parallel tables keyed to chapters of the report. Additionally, a summary volume has been issued separately comprising the first two chapters, which cover the Introduction and the Summary of Findings and the Recommendations.

The conduct of such a survey and the genesis of a report of this broad subject necessarily required the help and contributions of a large number of individuals, faculty and graduate students, of the Graduate Library School, the School of Education, and other departments of Indiana University, including the Institute for Research in Public Safety which provided assistance in the latter stages of the study.

Although the preparation of the report was primarily the responsibility of the principal investigator, it reflects work carried out by the entire project team. The team included Bernard M. Fry, principal investigator, Alice R. Jwaideh and Margaret I. Rufsvold, co-principal investigators, Donald J. Cunningham, associate investigator; Miles A. Libbey, James Huber, and Carolyn Mullins. They were assisted by Janet Elkins, who handled the complex operations of the project office most responsively and ensured order and timeliness in the massive flow of paper emanating from and received by the study team.

Also to be thanked are the graduate students who participated in various parts of the study: Kenneth Brown, Robin Dalton, Margo Marsh, Grace Moser, Michael Ormiston, and John Wendt.

The study also benefited greatly from consulting assistance of a number of education specialists and other key individuals in the field who made significant contributions to the design and conduct of the study and helped in improving early drafts of the report. They included: Roger C. Farr, William P. Gephart, Donald M. Goldenbaum, Carolyn Guss, John Hemmeter, William Kuvlesky, Robert R. Lange, William Loadman, Martha L. Manheimer, Keith W. Mielke, James R. Sanders, Edward G. Summers.

We are also indebted to the twelve educators, librarians, and information center managers who composed the two advisory panels for this study, and whose frank comments and criticisms are reflected in the summary of their recommendations in Volume III. (Chapter 1 of Volume III lists the members of the ERIC Study Advisory Panels and indicates the nature of their interaction with the study team.)

Our thanks also go to Patricia Sullivan of the Division of Information Resources, Office of Education, for her continuous efforts throughout the entire study to furnish requested information and materials and to facilitate the progress of the study. And last, but by no means least, we are grateful for the patient and effective work of Marjorie Shepley in the office of the principal investigator for the editing and preparation of the several drafts of the report.

Chapter 1

INTRODUCTION

The Educational Resources Information Center (ERIC) is a national education information system established by the U.S. Office of Education, National Center for Educational Communication (NCEC). As a major component, ERIC supports NCEC's mission to accelerate nationwide use of successful educational practices and research-based instructional materials. Now in its fifth year of operation, ERIC has evolved as a major, comprehensive, national document transfer and information system.

The overall goal of the ERIC program is to furnish ready access to the nation's current significant knowledge that can be used in developing more effective educational programs. ERIC allows any educator or person interested in any aspect of educational development to identify and obtain quickly reports of exemplary programs, research results, and evaluation studies in his specific area of interest from thousands of selected documents that otherwise would have been impossible for any single organization or person to locate.

Through a network of nineteen specialized centers, or clearinghouses, each of which is responsible for a particular educational area, the information is monitored, acquired, evaluated, abstracted, indexed, listed, and made available through a variety of ERIC products and services. These reference publications and services thus provide access to reports of innovative programs and the most significant efforts in educational research. The ERIC system is capable of making a major contribution to practitioners and researchers alike in terms of helping them to develop a continuously regenerative system.

Students, teachers, researchers, board members, advisory groups, and administrators continually function without adequate benefit of pertinent findings -- perhaps mostly because of lack of time to "review the literature." Pertinent information concerning the results of research, development, experimentation and evaluation is available in myriad publications of all kinds; however, the typical educator-user cannot hope to find time to collect and analyze such numerous and diverse sources of information directly. His only hope is to rely upon systematic collection and dissemination programs such as ERIC.

The purpose of this study was to examine the use made of ERIC products and services by members of the educational community, and in this context to evaluate the extent to which the ERIC system is achieving its objectives. The initial objectives set for the ERIC program were:

*to make significant, but previously unavailable R & D reports easily and readily available to educators

*to interpret and summarize results in ways that educational practitioners and decision-makers can use them

*to help strengthen existing educational communication channels for putting R & D results to use

*to become an important base for developing a national education information network

In the five years since its establishment, the multi-faceted document and information functions of ERIC have contributed importantly to an evolving national education information network, upon which new communication programs are being developed.

This study has focused on evaluation of products and services and has not undertaken to assess program concerns of ERIC not directly related to products and services.

Specifically, the study has attempted to provide information on the following questions:

1) The extent to which educators actually use the various ERIC services and products. In addition to investigating the frequency of use of the various services, an attempt was also made to examine the patterns of use.

2) The purposes for which ERIC services and products are used (e.g., to keep abreast in a field, assignments and term papers; curriculum development; program improvement; preparation of speech, report, article, research project; browsing, etc.)

3) The characteristics of users and non-users of ERIC services and also the differences between "heavy" and "light" users. Background variables examined included age, sex, occupation, position, academic degree, opinion leadership within the profession, general "activity" pattern, and information habits, including the extent to which "users" were also users of other information sources.

4) The extent to which educators are informed about the ERIC program, and the sources of their information. An assessment of the present awareness and knowledgeability of educators about the program will help to determine whether, and in what ways, the ERIC system needs to publicize its activities and services more widely.

5) Reasons for non-use, including insufficient knowledge, inconvenience, unavailability of needed materials, and preference for alternative sources of information. An attempt was also made to find out why infrequent users did not use the ERIC system more, as well as why those who have tried it have stopped using the system.

6) Suggestions for improvements in ERIC services and products. Respondents were asked what kinds of changes or extensions of present services would fit their needs better. Summaries of information and data resulting from this evaluation study together with findings, conclusions, and recommendations, have been prepared for review by NCEC and the ERIC staff for the purpose of identifying deficiencies and recommending needed improvements.

7) The overall impact of the ERIC program in meeting the information needs of educators and researchers, measured in terms of its effects upon their patterns of information-seeking and information use.

Categories for Analysis

The key categories used for analysis matched output measures against user populations. A cross-classification of these has served as a basic framework for summaries and synthesis of major findings regarding intensity and frequency of use, type of use, and use satisfaction.

1) ERIC PRODUCT AND SERVICE CATEGORIES

Document Availability

- Hard copy
- Microfiche

Index/Abstract Journals

- RIE
- RIE Accumulated Indexes
- CIJE

Indexes to Special Collections

- Pacesetters in Innovation
- Catalog of Selected Documents on the Disadvantaged
- Selected Documents in Higher Education
- Manpower Research Inventory
- OE Research Reports

Information Analysis Products

- Interpretative Summaries (State-of-knowledge)
- Research Reviews
- Bibliographies

Dissemination Programs

Clearinghouse Newsletters

Professional Journal Columns

Brochures and Audio-Visual Materials

Professional Societies

State and local agencies

Personal contacts

Reference Services

Thesaurus of ERIC Descriptors

2) USER OCCUPATION CATEGORIES EXPLORED

Administration

Teaching

Pupil Personnel Service

Research and Development

Library

Consulting

Undergraduate

Graduate

3) ORGANIZATION CATEGORIES EXPLORED

Pre-School

Elementary School

Secondary School

College or University

State Department of Education

Regional Education Laboratory

Research and Development Centers

Professional Organization

OE Regional Office

Other Federal Agency

Local or Regional Information Center

Reading Resource Network Center

Business or Industry

Diffusion Models

This study examined only direct use of information products within specialized user groups. This approach was based on a simple one-step diffusion model in which information moves from the ERIC system directly to the ultimate user (Diagram 1). In reality, the information diffusion process often involves at least several steps or linkages of exchange, particularly where local school staff is concerned (Diagram 2). Consequently, while this investigation attempts to provide an accurate picture of direct use of ERIC materials by the relevant publics selected for study, it probably underestimates the information impact of ERIC on local school staff and university students because these publics are tied in through intermediate linkages which were not within the scope of this study. Any future study of ERIC's impact should go beyond simple direct uses of product alternatives, especially for local school publics.

Diagram 1

Single Step Diffusion Model Latent in Structuring
This Investigation of ERIC Product Utilization

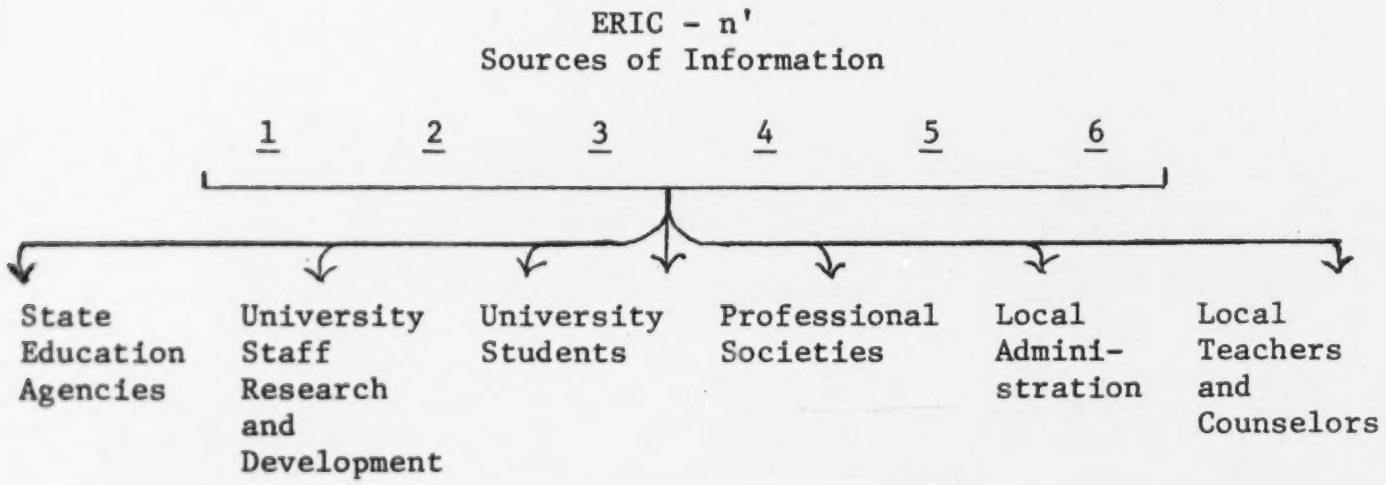
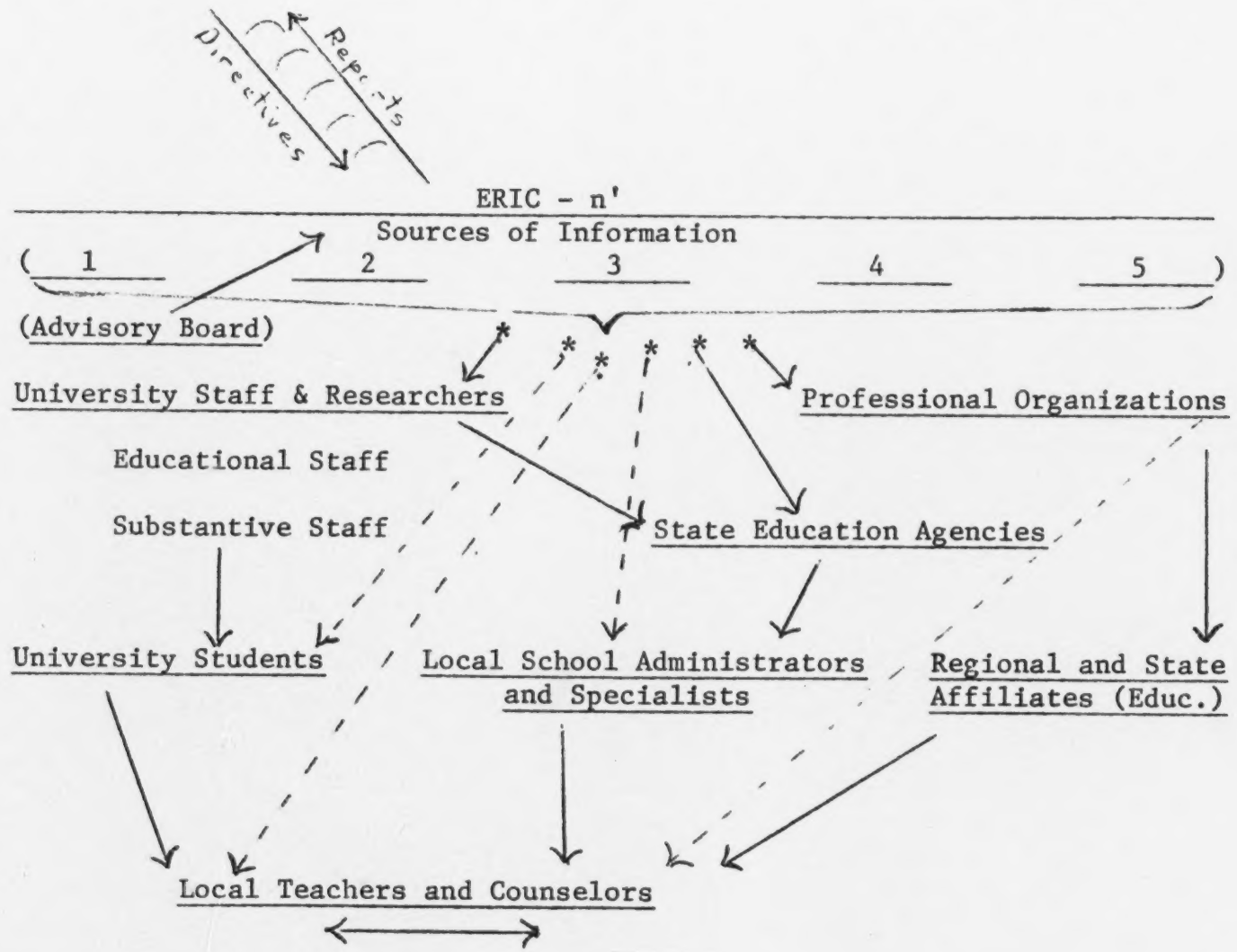


Diagram 2 Stepwise Diffusion Model for ERIC Materials and Information



_____Primary Linkages

------Secondary Linkages

*Lines of Diffusion Examined in This Study

Summary of Methodology

An account of the design and conduct of this evaluation study is contained in Chapter 1, Volume III, of this report. All tables cited in this summary of methodology also appear in Volume III. Table A1A.7 presents a review of populations, samples, and returns. The principal sources of data for this study were derived from five samples:

1) Individual User questionnaire, using a controlled sampling procedure (494 respondents). This questionnaire was administered by educational institutions to a broad cross-section of users of ERIC products and services. Eighty-one percent of institutions sampled responded. These included institutions holding complete ERIC standing order collections, both private and OE supported, educational information centers, and Reading Resources Network Centers.

2) Organization questionnaire, which included a sample size of 441 organizations, with an average return from sub-samples of 83%. The organization questionnaires were sent to six target populations, carefully screened to prevent duplication. The populations queried included OE supported standing order collections at Clearinghouses; OE Regional Offices; and Regional Educational Laboratories; privately supported standing orders; Reading Resources Network Centers; educational information centers; State Departments of Education; and EDRS individual or demand orders. Information on the procedure and response returns for these six populations is summarized in Tables A1A.1 and A1A.2.

3) *CIJE* questionnaire, with a sample size of 398 representing 100% of individual and 25% of institutional subscribers. That section of the Individual User questionnaire pertaining to *CIJE* was further administered to the subscriber population and was used in this analysis for supportive purposes only because of the low response rate of 54%. Further information on the procedure and response rates for the *CIJE* questionnaire is summarized in Table A1A.4.

4) *RIE* questionnaire, with a sample size of 1025 representing 100% of individual and 25% of institutional subscribers. That section of the Individual User questionnaire pertaining to *RIE* was further administered to the subscriber population and was used in this analysis for supportive purposes only because of the low response rate of 51%. Further information on the procedure and response rates for the *RIE* questionnaire is summarized in Table A1A.5.

5) Professional Journal questionnaire, which was administered to a sample of 4318 individual subscribers to five representative educational journals which regularly feature a column about ERIC products and services. A 5% sample was taken of these journals for which the number of subscribers ranged from 6,500 to 37,000. A total of 1011 useable questionnaires was returned in time for analysis. Individual sample sizes and returns are shown in Table A1A.6.

The objective data drawn from questionnaires were supplemented and expanded with data gathered through 31 site visits by the project staff (See Table A1B.1). Additional data were collected from two advisory groups of twelve experts in the field of educational information dissemination. The list of members of the ERIC Study Advisory Panels is included as Table A1B.2.

Descriptive data referred to in the study have been obtained from Central ERIC, Clearinghouse Quarterly Reports, and EDRS sales and distribution records. These data were fully identified in Chapter 1 of Volume III of this report and are cited in relevant figures and tables.

In summary, these data sources have provided a comprehensive overview of a very complex information system. Taken together these data sources have provided a multi-dimensional survey by bringing together data from individual users, observed data from multiple samples of organizations providing service, and data from journal subscribers, including both *RIE* and *CIJE* as well as representative professional educational journals. Finally, purchasers of individual documents were sampled on a random basis. In every instance but the last it was possible to prevent overlap and duplication of sources. Site interviews, phone calls and correspondence were utilized for follow-up and assessment of the representativeness of samples and possible bias.

In order to permit ease of reference from the Summary Findings to the specific data upon which they are based, each topical group of findings is keyed to the relevant data sources.

Assumptions on Non-respondents

An inherent problem in any survey research is that of the non-respondent. A lack of response tends to make the data unreliable, thereby reducing the validity of generalizations to the universe based on the sample statistics. Two methods for combating this problem are: (1) increase the response rate (a 70-80% return rate is generally accepted as a minimum rate); or (2) investigate the characteristics of the non-respondents upon which qualified generalizations can be made.

With the exception of the EDRS "demand" orders, the response rates of the organizations' questionnaires were acceptable (range of 69-100%). The same was true without exception of the individual users' questionnaires (range of 73-90%). The response rates of the *RIE* and *CIJE* subscribers' questionnaires were typical of mailed out questionnaires (ranging from 46-54%), and below the minimal acceptable rate for analysis except in a supportive role.

As the response rates for the organizations and individual users were in the acceptable range, the assumption was made that the non-respondents were no different than the respondents and that any generalization to the universe based on these questionnaires' data was relatively valid.

The same assumption was made in regard to individual items on these questionnaires. Any comparative figures for a given item are based upon the total number of valid responses to the respective item.

Notes on Interpreting Data Tables

It has been the policy of the present study to rely for analysis principally on individual user questions, except where other elements such as organizations, journal subscribers, site interviews, panel experts, etc. have importance or unique contributions to make, or to provide data on observed use as contrasted to direct use. In general, the data from the study have been gathered under circumstances of high response rates, although survey results which included considerable non-response were still useful. With substantial non-response, say over twenty to thirty percent, survey data reflecting suggestions or changes in or improvements in ERIC services were useful but were not considered general measures of user satisfaction or expressions of opinion as to the value or importance of ERIC products and services. In this latter category, the *RIE* and *CIJE* subscribers' questionnaires fell below the minimal acceptable response rate and have been used only for supportive purposes. In this case, however, responses to individual questionnaires provided acceptable data for analysis.

It was not prudent to rely on organization means with a sample size of less than five. Similarly, although calculations were made of individual users with a sample size of five or over, such information must always be interpreted with great caution, particularly if discrepancies between two related tables exist. As a rule, only a sample size of ten or more users was accepted without additional validating data.

It is also important to note that in several tables respondents were categorized by primary professional role because some of the responses regarding purposes of use of ERIC materials are undoubtedly generated by demands of these individuals' secondary or tertiary professional function (e.g., many teachers are also students for all or part of the year). This seems particularly evident in the cases of administrators, teachers, and graduate students, for example, where considerable overlapping within the categories and over professional roles is to be suspected.

Areas Outside Scope of Study

Some disclaimers are in order to identify products and services as well as types of data that were considered outside the scope of the present study. At the request of the Office of Education, the study questionnaire on evaluation of ERIC Tape Data Bases was not used because of overlap with a separate OE investigation. Similarly, the study team was asked to circumscribe its coverage of information analysis products. It was agreed that the present study would evaluate input to *RIE* and *CIJE* from the user's point of view with emphasis on value to the user. In contrast, OE undertook a

separate evaluation of the information analysis program of the National Center for Educational Communication (NCEC) which was designed to be a more subject-oriented, scholarly evaluation with the emphasis on the criteria for input and actual quality of the information analysis products.

This study has produced widespread evidence of non-use of particular products and services which, together with data from open-ended questions, site interviews, and panel members, suggests lack of awareness as the principal reason for non-use. Other possible reasons for non-use were also proposed such as delays and costs of document delivery, non-acceptance of microfiche, lack of targeted materials, research vs. practitioner orientation, etc. To what extent these and other cited reasons play a role in the findings of this study cannot be determined precisely and conclusively from these data.

Interviews were used, to a limited extent, as a follow-up of the mail questionnaires including a small percentage of those persons and organizations who failed to respond to the questionnaires. These data were integrated in the analysis, but there is a need to gather more comprehensive data from non-users in order to learn more about resistances and blocks to use of ERIC products and services. Information should be gathered on alternative information sources used and other reasons for non-use such as anti-research attitudes, reluctance to use report literature, non-acceptance of microfiche, etc. Accordingly, a principal recommendation of this present study is the need for developing more extensive and in depth information on non-users of the ERIC system, i.e., why potential users are not using ERIC products and services.

Estimates of the Full Universe of ERIC Users

The extent of use of ERIC products and services by the total universe of users in all educational areas and under all circumstances cannot be estimated with any precision using the data of the present evaluation study. Classical methods, which assume random sampling, are not theoretically correct for the projection to a full universe of users when the data come from combinations of samples as in this study. Although the survey instruments employed by this study comprehensively solicited response from the principal educational communities, the study team is convinced the field is so vast and diverse that only gross estimates of ERIC users can be extrapolated to an unmeasured total universe of educators.

Proceeding with this note of caution, the study team developed a series of summary tables (1.1 through 1.7) which estimate the total number of users of ERIC products and services, broken down by organization affiliation, and by educational occupation wherever possible. The resulting estimates must be considered an understatement of ERIC usage because they are derived from data adequate for evaluation but not for a census of users. The data for all estimates were derived from responses to the organization questionnaire described above, and represented estimates of observed use by library and information center staff.

Table 1.1 provides an estimate of 194,229 users served per week, with undergraduate and graduate students accounting for 120,705 or 62% of this total and teachers 41,175 or 21%. Administrators were the third most numerous group at 21,142 or 11%.

As noted earlier, there is evidence many teachers were using ERIC materials in a student capacity. These data were brought out by respondents to the Individual User questionnaire (see above summary of methodology) in which the secondary professional roles of ERIC users were identified (Table 3H, Vol. I).

Privately supported standing order institutions, of which 80% were colleges and universities, recorded the largest number of users (126,984 or 65% per week) among organizations (Table 1.2). Education information centers with 33,790 or 17% and State Departments of Education with 14,238 or 7% were the next most used service centers.

Estimates of the total number of users of ERIC publications are:

Product	Estimated Total Number of Users Per Week
RIE	190,590
CIJE	138,330
Microfiche	178,190
Hard Copy	135,260

TABLE 1.1

ESTIMATED TOTAL NUMBER OF USERS SERVED PER WEEK BY OCCUPATION

	Estimated No. of Users Per Week	%
Teacher	41,175	21.2
Administrator	21,142	10.9
Graduate Student	43,120	22.3
Undergraduate Student	77,585	39.8
Researcher	5,952	3.1
Librarian	5,255	2.7
Total	194,229	100.0

Source: Organization Questionnaire

*N = 246 organizations responding (Table AlA.2 in Vol. 3)

TABLE 1.2

ESTIMATED TOTAL NUMBER OF USERS PER WEEK
BY ORGANIZATION

	No. of Organizations Responding	No. of Users Per Week	%
*Clearinghouses	14	855	0.4
Education Information Centers	22	33,790	17.3
*USOE Regional Offices	7	774	0.3
State Departments of Education	35	14,238	7.3
Reading Resources Network Centers	27	12,441	6.4
*Regional Educational Laboratories	10	638	0.3
Standing Orders (Privately Supported)	31	126,984	65.3
EDRS Individual Orders	100	5,283	2.7
	246	194,229	100.0

Source: Organization Questionnaire

*Included in sample of USOE-supported standing orders (Table AlA.1 in Vol. 3)

TABLE 1.3

MEAN NUMBER AND TYPE OF SPECIALISTS SERVED/WEEK IN EACH ORGANIZATION

	1	2	3	4	5	6	7	8	9*
Teacher	12	194	8	65	77	10	43	115	524
Administrator	8	74	22	30	77	8	28	31	278
Graduate Student	9	9	12	28	130	10	121	24	343
Undergraduate	4	16	22	107	73	7	218	344	791
Researcher	5	3	17	14	9	20	12	66	146
Librarian	7	14	5	20	11	3	7	7	74
Average total No. Served/week in each organization	45	310	86	264	377	58	429	587	2156

*1. Clearinghouses (14)
2. Information Centers (22)
3. Regional Offices (7)
4. State Departments of Education (35)
5. Reading Resources Network Centers (33)
6. Regional Educational Laboratories (10)
7. Standing Orders (Privately supported) (31)
8. EDRS Individual Orders (100)
9. Average Number Served

Source: Organization Questionnaire

Table
1.4

MEAN NUMBER OF USERS OF ERIC PUBLICATIONS PER WEEK
BY PRIMARY ASSOCIATION

Primary Association	RIE	CIJE	MICROFICHE	HARD COPY
Pre-School	--	--	--	-- *
Elementary School	8	--	--	-- *
Secondary School	3	8	6	16
College or University	17	16	17	11
State Dept. of Education	12	9	12	5
Regional Ed. Laboratory	11	8	11	9
R & D Center	18	6	22	8
Professional Organization	9	10	4	3
Office of Ed. Reg. Office	7	3	6	10
Other Federal Agency	10	10	12	6
Local/Reg. Info. Center	14	8	14	11
Business or Industry	5	5	3	3
Other	10	7	9	6
Overall	124	90	116	88

Source: Organization Questionnaire
* Where N < 5, calculations have been omitted

Table
1.5

MEAN FREQUENCY OF USAGE OF ERIC PUBLICATIONS FOR 1970 BY OCCUPATION PER INDIVIDUAL USER

Occupation	RIE	CIJE	MICROFICHE	HARD COPY
Administration	4.91	2.56	10.50	2.79
Teaching	4.14	2.78	8.08	1.92
Pupil Pers. Serv.	--	--	--	-- *
R & D	5.44	2.88	12.33	3.54
Library	6.16	3.95	8.71	1.75
Consulting	4.66	1.18	12.42	2.42
Undergraduate	2.50	< 1.00	2.50	< 1.00
Graduate	4.44	3.00	7.23	< 1.00
Other	4.19	< 1.00	10.00	< 1.00
Overall	4.67	2.71	8.56	1.17

Source: Organization Questionnaire
* Where N < 5, calculations have been omitted

Table 1.6

ESTIMATED MEAN USAGE PER INDIVIDUAL OF SPECIAL DOCUMENT COLLECTIONS DURING 1970 BY OCCUPATION

Occupation	Pacesetters in Innovation	Catalog of Selected Doc. on the Disadvantaged	Catalog of Selected Doc. in Higher Educ.	Manpower Research Inventory	Research Reports
Administration	5.19	5.54	3.64	4.21	6.45
Teaching	3.59	3.87	5.40	4.09	4.91
Pupil Pers. Service	N<5	N<5	N<5	N<5	N<5*
R & D	6.39	5.44	5.61	5.50	7.03
Library	7.07	7.47	7.24	5.60	6.00
Consulting	3.45	8.89	5.78	6.22	6.60
Undergraduate	4.93	4.71	5.00	5.22	4.71
Graduate	7.14	6.09	7.07	7.07	4.85
Other	5.94	1.88	4.69	3.53	6.24
Overall	5.85	5.53	5.99	5.53	5.60

Source: Individual User Questionnaire
*Where N<5, calculations have been omitted

Table 1.7

ESTIMATED MEAN USAGE PER INDIVIDUAL OF SPECIAL DOCUMENTS DURING 1970 BY PRIMARY ASSOCIATION

Primary Association	Pacesetters in Innovation	Catalog of Selected Doc. on the Disadvantaged	Catalog of Selected Doc. in Higher Educ.	Manpower Research Inventory	Research Reports
Pre-School	10.20	16.50	N<5	N<5	3.33*
Elementary School	3.59	3.50	3.67	2.86	4.32
Secondary School	8.30	4.67	9.41	8.35	8.83
College or University	6.04	5.20	6.20	6.01	5.26
State Dept. of Education	6.33	5.00	7.10	7.40	5.44
Regional Ed. Laboratory	4.32	6.67	4.60	3.63	4.86
R & D Center	7.00	7.40	5.73	5.73	6.27
Professional Organization	N<5	N<5	N<5	N<5	N<5*
OE Regional Office	N<5	N<5	N<5	N<5	N<5*
Other Federal Agency	3.80	2.33	2.33	2.20	2.33
Local/Regional Info. Center	N<5	N<5	N<5	N<5	N<5*
Business or Industry	N<5	N<5	N<5	N<5	N<5*
Other	6.91	5.03	5.88	6.40	7.73
Overall	5.95	5.28	6.07	5.73	5.64

Source: Individual User Questionnaire
*Where N<5. calculations have been omitted

Chapter 2

SUMMARY OF FINDINGS (PART I)

AND RECOMMENDATIONS (PART II)

Introduction

This survey project is the first sytematic effort to evaluate how well ERIC has provided needed information about educational developments, research findings, and exemplary educational programs and practices across the nation. It was intended that this study project would provide the Office of Education with management information on which to (1) evaluate the extent to which ERIC has evolved toward meeting its goal of guaranteeing ready access to the nation's current, significant literature in the field of education; (2) identify areas where this goal has not been fully achieved; and (3) plan and initiate corrective action.

The Summary of Findings comprising Part I of this Chapter has been prepared to reflect the highlights and the most significant inferences to be derived from this study. The findings presented here in summary form are designed to call attention--based on analysis of data in the body of the report--to conditions, trends, and issues concerning use and user reactions to ERIC products and services. They attempt to provide a concise, analytical basis on which to evaluate the extent to which ERIC has met its goals, and, where its goals have not been fully met, to identify deficiencies and weaknesses. In general, the assignment and sequence of the subject arrangement of the summary findings correspond to chapters in the body of the report.

In order to permit ease of reference from the summary findings to the specific data (and analysis) upon which they are based, each topical group of findings is keyed to the supporting chapter and data source(s). All questionnaires cited are reproduced in full in Chapter 2 of Volume III of this report. Additionally, all descriptive and record data utilized for analysis and fully identified in Chapter 1 of the same volume.

The recommendations presented in Part II of this Chapter propose needed improvements and courses of action to correct deficiencies identified by this study. A brief discussion accompanies each recommendation to relate it to the framework of basic findings developed in the survey and to indicate specific implications or applications. Subsequent chapters (3-8) offer detailed background and supporting data (acquired principally from November 1970 to September 1971). It was inevitable, of course, that this study would be overtaken by continuing changes in ERIC products and services, rendering some recommendations inappropriate and anticipating others.

The recommendations recognize and reflect the extraordinary diversity of the educational community's information requirements and the efforts of the ERIC system to build a document-information network as a basis for development of new communication programs of the National Center for Educational Communication (NCEC). These recommendations deal for the most part with the management, performance, and economics of the principal functions of the ERIC system as reflected in its products and services.

When effectiveness of a document-information system is measured by satisfaction of the user's requirements, there is always uncertainty as to whether the fault lies with the system or with the user. A basic assumption underlying the recommendations of this study has been that the system must respond to the user's requirements, even though poorly articulated.

Although a number of recommendations propose further study and research, it should be understood that this evaluation study, because of its range and scope, has of necessity been cast in the role of an overview. Because the field of document-information transfer in educational areas is so broad and complex--and primitive--much investigation remains to be done before a national document-information system can make its full contribution to educational communication. Accordingly, almost every page of data and analysis of this report contains implicit questions requiring further study.

Two chapters in Volume III also provide recommendations of experts on the advisory panels and anecdotal information obtained from open-ended questions addressed to individual users of ERIC products and services. Chapter 3 includes the "Summary of Conclusions of ERIC Study Advisory Panels;" and Chapter 4 reports fully on "Anecdotal Information."

PART I

SUMMARY OF FINDINGS*

GENERAL**

The principal indicators of increased use and user satisfaction with ERIC products and services were all positive. Whether measured quantitatively by the remarkable growth and increased use of ERIC publications, or qualitatively by the stress of synthesis and evaluation and by emphasis on the dissemination of information as well as document delivery, ERIC has come a long way toward achieving its overall goal of providing local access to needed information that can be used in developing more effective educational programs.

Users judged the ERIC system as a whole very favorably. Two-thirds considered the system very useful. Next to professionals in libraries, teachers, research personnel and administrators among occupational groups ranked the ERIC system highest in value.

Nine of every ten individual users reported that they obtained information through the ERIC system which they probably would not have found otherwise. For most of these users, the frequency of this experience varied between one and ten times.

Seven out of ten users reported information obtained from the ERIC system resulted in improvements in the way they do things.

More than one-half of the individual users reported that ERIC had helped them avoid duplication.

The main purposes for which ERIC publications were used included: keeping abreast in a field, research projects, program improvement, assignments and term papers, and curriculum development.

Requests for clearinghouse user services increased by three-fourths between 1969-71. The educational practitioner accounted for the greatest increase in number of requests. Among groups requesting information, roughly three-fourths of the requests came from educational practitioners (45%), educational decision-makers (14%), and information specialists (13%).

---

*Index to Categories of Findings

General, p. 2-3
Characteristics of ERIC Users, P. 2-4
Documents Acquisition, p. 2-6
Microfiche, p. 2-6
Hard Copy, p. 2-8
Thesaurus of ERIC Descriptors, p. 2-9
Research in Education, p. 2-10
Current Index to Journals in Education, p. 2-12
Special Collections, p. 2-13
Comparisons of Indexing Journals, p.2-15
Information Analysis Products, p. 2-17
Dissemination Channels, p. 2-17

**Data sources: Individual User and Organization questionnaires; Clearinghouse Quarterly Reports

ERIC's growing *involvement with professional organizations has been productive in intellectual bridge-building.* In the period covered by this study the following results were observed: 700% increase in meeting participation, 600% increase in joint publication, and 300% increase in other affiliations.

Although *research and publication* variables revealed *different evaluation of particular ERIC products and services, no such differences* were apparent *with respect to the overall evaluation of the ERIC system.*

CHARACTERISTICS OF ERIC USERS*

Approximately *one-half of ERIC users were associated with colleges and universities; one-fourth were local school personnel.*

Graduate students and teachers were the *most numerous users* of ERIC products and services.**

Other *heavy users,* in order, were *librarians, school administrators,* and *research and development personnel.*

The typical ERIC user is a female graduate student or teacher about thirty years old with a master's degree. She likely has conducted research but has not yet published professionally.

ERIC Users Classified by Academic Degree:

- Nine of ten held an academic degree
- Five of ten held a master's degree
- Three of ten held only a bachelor's degree
- One of ten held a doctorate degree

ERIC Users Classified by Age and Sex:

- More than one-half are 35 or below, with one-third in the 26-35 age range.
- Slightly more than one-half of users were female.

---

*Data source: Individual User questionnaire.

**Based on sample of 465 respondents.

No professional interest group in the educational community dominates the use of the ERIC system; their primary interests are scattered across principal educational classifications.

Reported Channels for Obtaining Information (in descending order of importance)

- Journal articles
- Oral communication
- Abstracting and indexing services
- Books and Monographs

Reports ranked seventh among eight most important *channels of communication* cited by ERIC users.

Communication among Educators

- One-half of ERIC users were contacted an average of two or more times per month by other educators seeking information related to their current work.
- As degree level increased the average number of contacts per month also tended to increase; older persons tended to have a greated number of professional contacts than younger persons; and males reported a greater number of contacts than did females.

Publication Record of ERIC Users

Two-thirds of ERIC users have not published books or papers within the last five years.

Ten percent of ERIC users have *2 - 5 publications* within the last five years.

Research Affiliation

One-half of ERIC users had engaged in research during the last five years.

Three-fourths of users with a doctorate reported *affiliation with research* in the last five years.

More than half of school administrators and teachers reported some *research affiliation* in the last five years.

Outside Responsibilities of ERIC Users

About one-third of ERIC users have *outside professional responsibilities*

which include consulting, participation in meetings, responsibilities in professional associations, etc.

DOCUMENTS ACQUISITION*

There has been substantial and continuing growth in ERIC's total collection of screened documents, reaching about 100,000 in 1971.

Document selection criteria developed by ERIC clearinghouses reveal a high degree of uniformity in terms of specifying the quality and usefulness of documents to be acquired.

In contrast, ERIC users reflected the full scale of approval to dissent over selection policies, some preferring a highly screened collection of top quality documents, and others favoring application only of gross negative selection criteria.

A limiting growth factor of about 1,000 documents per month, or an average of 50 documents input per clearinghouse, operated to artificially influence the application of selection criteria.

During 1970-71 a trend developed toward more solicited than unsolicited documents.

The number of documents processed for local files declined in the past two years because OE discouraged the maintenance of large local files.

Many ERIC users expressed the need for a wider range of resource materials than non-published research documents.

MICROFICHE**

Microfiche Copies of ERIC Reports

Copies of most ERIC reports announced in Research in Education (RIE) are available in microfiche form at low cost to institutional subscribers of monthly standing orders--less than 10¢ for each microfiche or about $120.00 per month.

---

*Data sources: Clearinghouse Quarterly Reports; site interviews; Advisory Panels.

**Data sources: EDRS sales and distribution records; Individual User and Organization questionnaires.

The number of organizations purchasing all microfiche increased to a total of 417 in 1971 up one-third over the previous year and 30% over the past three years.

The number of ERIC reports sold in microfiche form (by titles) exceeded six million in each of the past two years.

Higher education accounted for the almost three-fourths of standing orders for microfiche in 1971.

Although local schools increased their microfiche collections in absolute numbers, their proportion of orders declined from 14% to 5% in the past three years; similarly, State agencies increased their number of collections three-fold, but barely maintained their proportion of orders at 8%. (This was accounted for by an accelerated expansion in the number of institutions of higher education acquiring collections.)

Individual purchases of ERIC microfiche grew by 50% in 1970 over the previous year.

Frequency of Microfiche Use

Microfiche were heavily used with four out of five ERIC users reporting use of microfiche at least 1-10 times a year and one-half using more than 11 microfiche titles during the year.

The most frequent use of microfiche was by research and development personnel, followed closely by administrators and teachers--85% of whom reported use of microfiche 1-10 times a year or more.

Graduate and undergraduate students also reported very substantial use of microfiche.

The number of people who are estimated to use microfiche each week at colleges and universities is far greater than that in any other organization.

Purposes for Using Microfiche

Overall the most often cited purposes for using microfiche were for research projects, assignments and term papers, and keeping abreast in a field.

Report and article preparation, curriculum development, and program improvement were also frequent purposes for use of microfiche.

Relative Usefulness of Microfiche

Of those who have used microfiche, less than one percent found it of little value.

Across all categories of respondents, only one in eight have never used microfiche.

Among ERIC users, three-fourths found the microfiche capability very useful.

Administrators, teachers, and graduate students were next to research and development personnel in expressing strong approval of the usefulness of microfiche.

Availability of Microfiche Equipment

Those organizations having the most equipment available have the heaviest microfiche usage, i.e., universities and R & D centers.

State departments of education and local and regional information centers also reported a high amount of equipment.

Although secondary schools recorded the lowest relative amount of equipment, school personnel reported 88% had accessibility to microfiche readers. Further, of those lacking such accessibility, 90% reported they would use readers if available.

Overall three-fourths of ERIC users reported a microfiche reader easily accessible.

A consistent theme of comment by users and operators of ERIC information services was the need for more, better, and less expensive microfiche readers and reader-printers.

HARD COPY (FULL SIZE) DOCUMENTS*

Orders for hard copy documents increased one-third in 1970 over 1969, to a total of about 60,000 copies. (Compared with 6,200,000 microfiche copies).

Local schools reported using hard copy less frequently than microfiche by a factor of 50%.

More frequent users of hard copy were State Departments of Education and Regional Educational Laboratories.

About half of ERIC users use hard copy whereas over 80% use microfiche.

Comparison of frequency of use data between microfiche and hard copy should take into account the large files of standing order microfiche available to users in a majority of the centers studied, as contrasted to a typically smaller number of hard copy documents purchased individually by centers at much greater expense per copy.

*Data sources: Individual User and Organization questionnaires; EDRS sales and distribution records.

THESAURUS OF ERIC DESCRIPTORS*

The most frequent users of the Thesaurus are, in order, librarians, research and development personnel, teachers, graduate students, and administrators.

Overall less than one-third of ERIC users indicate they have never used the Thesaurus.

Only one out of eight respondents indicate they first go to the Thesaurus in conjunction with use of RIE and CIJE.

There are only minor differences among users of CIJE and RIE in terms of initial utilization of the Thesaurus.

Both organizations and individual users of the ERIC Thesaurus found it "useful" or "very useful" by a large majority.

Those involved with research activities found the Thesaurus more useful than those not so involved.

Those who found the Thesaurus most useful were graduate students, librarians and research center personnel. This suggests that the Thesaurus is found very useful by those who are continually involved with library search and accustomed to the technique of information search.

About one-half of teachers and administrators found the Thesaurus "useful" or "very useful."

Overall about 90% of both individual users and organizations agree that the Thesaurus descriptors are representative of currently used language.

There is also overwhelming evidence that users found the descriptors to have the appropriate degree of specificity.

Data gathered from individual user responses, site interviews, and advisory panels suggested the following changes or improvements in the Thesaurus should be considered:

- terms should be geared to practitioners or researchers, not to both.
- more consistent policy in assigning descriptors.
- documents should be identified by type.
- people need to be trained in use of Thesaurus.
- program training manual is needed.
- new terminology should be added promptly.
- outdated terms should be deleted.
- categories have too many descriptors, topics too few.

*Data sources: Individual User and Organization questionnaires

-- --

·terms have tended to become too specific--applying to a particular (clearinghouse) discipline

·documents lag behind term changes

·more scope notes are needed

·an identifier index is needed

RESEARCH IN EDUCATION (RIE)*

The favorable judgment of RIE by ERIC users was nearly unanimous across educational occupations and associations. It was not affected by differences between researchers and non-researchers, or by differences among those who published and those who did not. In summary, four of every five users of RIE were very satisfied with it with only one-half of one percent passing a "no use" judg

Subscriptions to RIE leveled off after reaching a peak in 1968 of 4,400 subscribers, as compared to 4,200 in 1971. (This is not surprising in view of the preponderance of institutional subscriptions, some for multiple copies.)

Institutions of higher education account for 38% of the subscribers; state and local educational agencies have 27%; foreign subscribers are the third largest group comprising 13%.

Individual subscriptions to RIE have declined, both in terms of absolute numbers as well as percentage (from 13% to 4%). (This phenomenon has become common among abstract journals in recent years.)

Data gathered by this study suggest that users of RIE tend to be habitual. The majority have used it six times or more per year.

Occupational categories reporting most frequent use of RIE included research and development and the library. Local school administrators and teachers were ranked next highest in frequency of use.

The most frequent users of RIE according to professional role were found among Regional Educational Laboratories, State departments of education, colleges and universities, and research and development centers in that order.

Across occupational groups the reasons for using RIE were:

·*administrators*: keeping abreast in a field, research projects, program improvement, curriculum development.

·*teachers*: research projects, assignments and term papers, reports, keeping abreast in a field.

*Data sources: GPO subscription records; Individual User, Organization, Professional Journal and RIE questionnaires; Advisory Panels; site interviews.

·*researchers*: research projects, curriculum development, keeping abreast in a field.

·*graduate and undergraduate students*: assignments and term papers, research projects.

Overall *two-thirds of users consult* RIE *primarily to locate a document which contains specific information.* Less than *one user in five read or scanned each issue solely for current awareness. Teachers* depend heavily, and *administrators* to a somewhat lesser extent, upon RIE *for searching past issues to locate specific information.*

Subscribers to professional educational journals containing ERIC columns reported overwhelming success in finding information being looked for in RIE.

Data gathered from individual users' responses, site interviews, and advisory panels suggested the following changes or improvements in RIE should be studied.

·*flagging non-microfiche.*

·*providing running heads at top of each index page.*

·*merging institutional entries without regard to subdivision.*

·*coding level* (age, elementary, high school, etc.)

·*coding type* (speech, survey, report, etc.)

·*returning to color coded sections.*

·*omitting or flagging non-available documents.*

·*indexing consistency as between general or specific.*

·*correcting unevenness in quality of documents*

·*providing material on "hot topics" often not available*

·*re-naming* RIE *to* Resources in Education

Data collected on *frequency of use and respondent satisfaction with annual* RIE *indexes show comparable patterns of usage to* RIE *itself*

Four out of five users indicated a *high degree of satisfaction with the annual indexes.*

In judging types of *information considered essential for purposes of searching and identification of relevant documents in* RIE, *two-thirds of individual users voted for abstracts as first priority,* with descriptors and kinds of documents *considered next most important.*

Two-thirds of individual users chose designation by a symbol as the best way to handle unavailable documents covered by RIE.

Four of every five users of RIE (compared to three of five CIJE users) reported success in finding sought after information.

More than three of every four local school teachers and administrators using ERIC materials considered RIE very useful.

RIE was evaluated high on range of topics, contents of resumes, and the indexing system, but relatively low in other characteristics including quality of material selected and timeliness.

CURRENT INDEX TO JOURNALS IN EDUCATION (CIJE)*

Subscriptions to CIJE have leveled off and in fact declined slightly from a peak reached in December 1969. As in the case of RIE, the largest number of subscribers to CIJE is found among institutions of higher learning. The second highest group is formed by local school districts. These two groups account for over 70% of all subscribers. Particularily noteworthy is the virtual absence of individual subscriptions, somewhat fewer than RIE. This may be due in part to the price of CIJE.

Across all educational occupations individuals reported a moderate absence of CIJE use with more than one-third of respondents indicating "never used". The exceptions are library workers and graduate students, but even among them about one out of four never used CIJE.

Highest frequency of usage among individual users was reported by librarians and graduate students.

Researchers and those who had published showed a comparatively higher frequency of use.

Undergraduates rarely use CIJE or are unaware of its existence.

With the exception of administrators, use of CIJE for assignments and term papers was dominant. Administrators reported "keeping abreast" and "curriculum development" are the most impelling motives for using CIJE.

Two of every three users of CIJE search the index for specific information. One out of seven reads or scans for current awareness. (Percentages are roughly the same as reported by RIE users).

*Data sources: CIJE subscriber records; Individual User, Organization, and CIJE questionnaires; Advisory Panels.

Users rated CIJE somewhat lower as to satisfaction than they did RIE.

Overall three of every five users of CIJE voted the index as highly useful; only one in four actual users rated CIJE relatively low.

CIJE compared favorably with other educational indexes in measures of usefulness. CIJE ranked either "equally useful" (41%) or "more useful" (48%).

Elementary and secondary teachers ranked CIJE higher in usefulness than did other occupational groups.

Among CIJE institutional subscribers, more than three-fourths reported heavy use (six times or more per year) across all occupational groups.

The large majority of CIJE users go first to its subject index. Only 7% reported they initially consult the ERIC Thesaurus in conjunction with CIJE use.

Individual users reported main purposes for use of CIJE were assignments and term papers and research projects; subscribers ranked main purposes for use of CIJE as follows: keeping abreast in a field, research projects, preparation of papers, and assignments and term papers.

Use of CIJE for curriculum development and program improvement was relatively low.

Three of every five users of CIJE (compared to four of five RIE users) reported success in finding sought after information.

More than four out of five users approved the coverage of journals and selection of journals

Channels of communication were ranked according to their importance by CIJE subscribers: journal articles, abstracting and indexing services, and books and monographs. Reports received few first-place votes, but ranked equally with journal articles and other media as third most important channel.

Two of every five CIJE subscribers had undertaken research; one-third published papers.

Journals indexed in CIJE are almost all available in a nearby library.

SPECIAL COLLECTIONS*

In general the special ERIC collections are characterized by lack of use with more than two-thirds of ERIC users reporting "never used" or failing to respond. (Current low use may be accounted for by the age of the collections, i.e., all are 1969 or older.) No differences appear with respect to either the research or the publication variables.

*Data sources: EDRS sales and distribution records, Individual User and Organization questionnaires.

Pacesetters in Innovation

Overall *two of every five* respondents have *never used* Pacesetters in Innovation, and not including a 27% non-response rate. *Administrators and teachers ranked highest among those who had never used this collection.*

Fewer than one in five users rated Pacesetters *more than moderately useful*

Catalog of Selected Documents on the Disadvantaged.

40% of the respondents never used the Catalog of Selected Documents on the Disadvantaged. Of those who did use the Catalog, about *one-half restricted its usage to less than six times a year.*

Librarians, consultants, and graduate students seemed to *favor the* Catalog *more than other groups.*

Selected Documents in Higher Education

Overall *use frequency of* Selected Documents in Higher Education shows an *even lower rate (28%) than for other special collections.* This is accounted for in part by its *unavailability for purchase.* ERIC product users in *all occupational categories* indicated rather uniformly a *low usage frequency for the* Selected Documents. *Those who did use the* Documents, however, had *relatively high and frequent need for it.*

The Selected Documents were of *relatively little use to organizations as compared with usage by individuals.*

Manpower Research Inventory

The *Manpower Research Inventory* was *used relatively lightly* with a *high rate of non-users* (46%) and not including a non-response rate of 29%. Findings pointed to a rather *specialized group of users across occupations of the* Inventory *documents. Those who had not published used the index much less frequently than those who had.*

Roughly *two out of five people* who actually used the *Inventory gave it a high rating of usefulness,* including those in *administration, teaching, research, and graduate study categories.*

Office of Education Research Reports

The *Office of Education Research Reports* was *used relatively frequently by contrast with the other special collections.* About 35% of *respondents reported using the* Reports. The *heaviest user categories* included *research libraries, consultants, teachers,* and *administrators,* all of whom reported *use of 1 - 5 times per year or more.*

Researchers used the Reports *more often than did non-researchers; an identical difference existed between those who had published and those who had not. Administrators and teachers* tended to *use the Reports less frequently* than those in research and in libraries.

Similarily, a *greater degree of satisfaction* was reflected by *researchers and those who published.*

Of people in those *groups who used the* Reports, *administrators gave few high ratings* compared with respondents in *teaching, research, libraries, and graduate studies.*

COMPARISONS OF INDEXING JOURNALS*

Availability of Index Journals

Over half of libraries and information centers providing ERIC products and services subscribe to all three of the major indexing journals in education: *Education Index, Research in Education* (RIE), and *Current Index to Journals in Education* (CIJE)

Education Index is the journal most available in libraries to ERIC users, closely followed by *RIE* with *CIJE* a distant third.

Education Index ranks highest in availability among teachers and administrators.

Choice of Index Journals When More Than One is Available**

The high non-response rate (51%) among subscribers to professional educational journals indicated probable unfamiliarity with one or more of the three indexing journals cited.

Education Index was the preferred choice among subscribers to professional education journals, closely followed by *RIE*, with *CIJE* registering less than one-third the popularity of either of the other two journals.

Approximately one-half of teachers among journal subscribers used *Education Index* as against 39% for *RIE* and 11% for *CIJE*.

Administrators among educational journal subscribers reported *Education Index* and *RIE* were used equally with *CIJE* recording about one-half of their levels of use.

Frequency of Use

Among individual users of ERIC products and services, *RIE* ranked first with 72% recording some use of *RIE*.

Education Index was next most used by 68%, and *CIJE* followed with 54% indicating use of this journal.

---

*Data sources: Individual User, Professional Journal, *CIJE*, and *RIE* questionnaire
**Data source: Professional Journal questionnaire.

Dissertation Abstracts (50%) and *Psychological Abstracts* (38%) recorded surprisingly high levels of use by educators, while *Educational Administration Abstracts* and *Child Development Abstracts and Bibliography* were each used by only 18%.

Comparative Usefulness of CIJE*

CIJE was compared to other educational indexing journals covering the periodical literature with the result that 92% of respondents rated *CIJE* equally useful (53%) or more useful (39%) than other indexing journals. Only 8% considered *CIJE* less useful as compared to other journals indexing the periodical literature.

Ways in Which Indexing Journals were Used During the Past Year.

Two-thirds of individual users reported that they used *RIE primarily to search past issues to locate specific information. Graduate students, teachers, and administrators* all reported frequent use of RIE for *searching. RIE ranked first in use for current awareness* although less than one-fifth reported *reading or scanning the journal for this purpose.*

Less than 10% reported using *RIE* for both purposes.

Almost *two-thirds of individual respondents* reported using *CIJE primarily to search for specific information.*

Approximately two-thirds of users indicated that *Dissertation Abstracts* was used primarily to search for specific information, with indications of uniformly heavy use by *librarians, teachers, administrators, and graduate students.*

Among the seven indexing journals examined, *Education Index* recorded the highest percentage of users searching for specific information. (Seventy per cent, as against 67% for *RIE* and 62% for *CIJE*.)

Educational Administration Abstracts was little used by ERIC respondents (corresponding closely with *Child Development Abstracts and Bibliography*) with school administrators indicating greater use of this indexing journal than other occupational categories; but even so, 43% reported never using *Educational Administration Abstracts*.

Psychological Abstracts ranked fifth among the seven indexing journals in use by ERIC respondents, with 53% indicating primary use for the purpose of retrospective searching.

*Data source: Individual User questionnaire, in which only actual users of *CIJE* were asked to respond.

INFORMATION ANALYSIS PRODUCTS*

Reviews and bibliographies are cited in RIE and reach users in a variety of ways: direct from clearinghouses, through Educational Documents Reproduction Service (EDRS) and from professional organizations.

Newsletters sometimes include information analysis material, and an annual bibliography of these publications provides a comprehensive listing. The variety of outlets impress many users as both a strength and a weakness of the system.

Substantial growth in all information analysis products occurred over the three-year period, 1967-70.

A substantial portion of the ERIC system's users do not utilize information analysis products to any great extent. Overall, almost one-half of users reported either "no use" or "never used." The relative lack of use of information analysis products was attributed by many non-users to widespread lack of awareness of the existence of potentially useful summary publication.

Administrators make the most use of all types of summarized and interpreted information. Consultants and teachers rank next in the use of interpretative summaries.

Actual users of information analysis products reported a high rate of use. Those involved with research and publication generally used information analysis products more.

Only one in four of organizations providing service to users found information analysis products "very useful."

Variation in quality and excessive use of research terminology were seen as obstacles to use of information analysis products.

Educators involved in information dissemination expressed a desire for more interpretative materials including state-of-knowledge reviews. Summaries of "hot" topics and related bibliographies were also favored.

DISSEMINATION CHANNELS**

ERIC's development has been characterized by a continuing, vigorous effort to help strengthen existing communication channels among educators and educational organization.

---

*Data sources: Individual User and Organization questionnaires; Clearinghouse Quarterly Reports; Advisory Panels; site interviews.

**Data sources: Individual User, Organization, Professional Journal and Newsletter questionnaires; Clearinghouse Quarterly Reports; Advisory Panels; site interviews.

Earlier emphasis on *basic dissemination media* such as clearinghouse newsletters, columns in professional journals, and audio-visual materials appears to have shifted in the past year to non-document efforts such as education improvement centers and state dissemination teams. Continued increases in numbers of flyers and brochures are exceptions.

As ERIC has matured its *emphasis has begun to shift increasingly to analysis and interpretation of information for target audiences;* to increased relationships with professional organizations including panels, conferences, displays, etc.; to training State dissemination teams, under an NCEC program, in their efforts to assist educators in problem formulation and retrieval of relevant information.

Most users first learned of ERIC through classroom instruction or colleagues, not through ERIC dissemination products.

ERIC columns in professional journals have a potential of reaching over one million educators comprising target audiences defined by various professional organizations. More than one-half of journal subscribers, however, did not read ERIC columns or were not aware of their existence.

All but one clearinghouse issue a newsletter. Typically they provide information on significant new ERIC research materials to key staff of agencies and organizations that they would otherwise have missed.

Teachers and graduate students are among important segments of the community of potential ERIC-users that do not receive or read *ERIC newsletters.*

A *brochure* is one of the most effective ways to promote ERIC among State and local agencies and information centers.

The total number of *brochures* produced by clearinghouses on specific aspects of ERIC's offerings *continues to increase.*

Clearinghouses increasingly are involved in a variety of *cooperative efforts with the professional associations* in their respective areas.

In addition to providing bibliographic services, participating in meetings, joining in publication arrangements, etc., *ERIC clearinghouses have strengthened the dissemination programs of professional organizations* themselves and have brought about wider acceptance and use of unpublished research materials.

PART II

RECOMMENDATIONS

General

1. In order to insure that ERIC products and services remain responsive to users' needs, a program for continuous measurement of use and user reaction should be implemented.

A one-time evaluation can only measure the performance of an information system at a particular point in time. As changes are made to a system, particularly to a dynamic information system such as ERIC, it would be desirable to estimate the effects of those changes. It is obvious this evaluation study of ERIC products and services can only provide a broad overview and can not identify all areas of use and user reactions. It can locate the most important sources and areas of greatest weakness, but it cannot hope to identify all specific instances of user satisfaction or dissatisfaction, or for example, all cases of vocabulary inadequacies in the system. To acquire and analyze data that will allow the continuous improvement of ERIC products and services, a long-range monitoring and evaluating program should be developed and implemented by Central ERIC. Additionally, each clearinghouse should carry out its own continuous evaluation effort, essential for the improvement of its separate services and contributing to the overall system measurement.

2. All libraries and information centers maintaining ERIC collections should be encouraged to follow a single, simple record system, cooperatively arrived at, which will accurately reflect use of and user reactions to ERIC products and services.

If properly maintained, such a record system would be of equal value to the centers themselves and to ERIC management. It is traditional that libraries and information centers maintain poor records of use and users of the materials they service. Educational information centers are no exception to this practice. During a preliminary solicitation of data from information centers in the summer of 1970, eleven information centers recommended as active and likely to maintain adequate records on the use of ERIC materials were found, when queried, to be able to furnish very little factual information apart from gross estimates. In point of fact, only two centers were able to provide significant data of value to this study. This was borne out in April 1971, by responses of information centers receiving questionnaires which asked for estimates of numbers of users on an average day. Estimates were frequently grossly overstated.

3. Products and services developed by the ERIC system should be reviewed in the context of the total information resources available to the educational community, including those sponsored or developed by commercial organizations and by professional educational societies.

Such a periodic assessment is necessary in order to identify strengths and weaknesses in educational communication across all categories and in

all educational areas. This periodic review, possibly carried out by the clearinghouses and coordinated by Central ERIC, would contribute importantly to shaping future ERIC program development and allocation of resources. Possible duplication of effort as between the ERIC system and commercial publishers and professional societies could be avoided and a basis of public-private cooperation more fully established. In a sense, the clearinghouses in their particular educational areas would take on some of the characteristics and responsibilities of the delegated agent function stressed in the Wineberg Report, i.e., advising on the state of educational communication in their areas.

4. Studies to determine the half-life for educational literature citations, including both journals and research reports, are needed and should prove useful to ERIC managers in program development.

It is commonly said in educational areas as well as in many other fields that "anything of significance gets published". This rule of thumb has been examined by other fields and disciplines and found to have varying validity. A similar study needs to be undertaken in educational areas to determine:

1) The relative use of reports as a communication channel.

2) The extent to which reports or their contents appear later (and how much later) as journal articles.

3) The possible application of the referee system, or its equivalent, to the report literature as a means of remedying the defects of "quick and dirty" reporting which is characteristic of many reports.

4) The extent and rate at which reports, not necessarily their contents, become obsolete.

The data produced by this study underline the need for more information on the role and acceptance of the report literature as a principal means of communication among educators.

5. More information would be useful on non-users of the ERIC system, i.e., why are potential users not using ERIC products and services.

This study has produced widespread evidence of non-use of particular products and services which together with data from open-ended questions, site interviews, and panel members, suggest lack of awareness as the principal reason for non-use. Other possible reasons for non-use have been proposed such as delays and costs of document delivery, non-acceptance of microfiche, lack of targeted materials, research vs. practitioner orientation, etc. To what extent these and other cited reasons play a role in the findings of this study cannot be determined conclusively from these data. The characteristics of non-users and reasons for non-use need to be identified in a separate focus and examined in depth as a means for determining possible corrective actions.

6. NCEC should urge professional educational societies to use their information and publication programs to familiarize their members with the potential usefulness of the ERIC national information system for providing ready access to results of exemplary programs, research and development efforts, and related information that can be used in developing more effective educational programs.

Professional educators in all areas should have an opportunity to become aware of the availability of ERIC products and services as working tools in the communication of new developments and research results throughout the educational community.

7. In order to reduce the overall effort required for document file maintenance, Central ERIC should provide standard guidelines for file maintenance, or perhaps a manual, to assist information managers in reducing time spent on collections as compared with time spent assisting patrons.

Time investment for maintaining and updating ERIC collections is relatively high when compared with the time spent assisting patrons, i.e., 5.6 mean hours per week as against 8.9.

Clearinghouse Responsibilities

8. A basic re-examination should be undertaken of the centralization-decentralization concept under which the several functions and tasks involved in document processing and information availability are assigned to the clearinghouses and to the ERIC Processing and Reference Facility.

The following recommendations for a reallocation of some functions and responsibilities which no longer require specialist clearinghouse support are based on data obtained from individual users and through site visits to clearinghouses and state and local agencies:

1) The indexing and abstracting operation now performed by the clearinghouses on a decentralized basis should be considered for reassignment to the ERIC Facility as a central activity. The apparent unevenness in ERIC indexing is characteristic of most decentralized efforts in indexing and could undoubtedly be improved through a centralized operation, which has many advantages for indexing. This would not eliminate the intellectual input from the clearinghouses from the standpoint of contributing new terms or reshaping language used in the *Thesaurus*. The technician expertise required for effective indexing as a regular function requires consistency across educational areas and training in the professional aspects of indexing itself, which could be performed more efficiently on a central basis. Similarly, descriptive abstracting does not call upon the special knowledge of clearinghouse professionals and can be better performed centrally by individuals trained for this activity.

2) Clearinghouse personnel have the knowledge, skills, and attitudes to increase the availability of information on tested alternatives in educational practices and to develop further ways to help educators apply new knowledge and successful practices in their particular educational areas. In brief, it is recommended that clearinghouse directors be given the additional assignment of serving as part-time dissemination links between the information resources in their particular education areas and the educational practices community at the state and local levels. In concentrating additional efforts upon all means to insure that information becomes applied to improvement of educational programs, professional clearinghouse personnel would have the opportunity to highlight new ideas and explore promising new methods for the transfer of information. Additionally, the clearinghouses, through their dissemination contacts, the provision of reference services, and the preparation of information analysis products need to be given increased responsibility as feedback loops for the system by identifying and inputting users' needs and reactions into the ERIC system.

3) As centers of subject-matter expertise the clearinghouses cooperatively should play an important advisory role in assessing the usefulness and impact of information analysis products developed by the clearinghouses in their separate capacities. This could take the form of a periodic (annual) review of new information analysis products, the impact they have had during the past year, and the directions in which they seem to be going in relation to user needs as reflected by the link between users and the clearinghouses.

9. The reference function performed by the clearinghouses should be re-examined to determine whether it should be continued at the present level, permitted to increase in volume and complexity, or be phased out altogether with a view to augmenting this essential function at regional and local information centers.

Although the numbers and types of requests for clearinghouse user services have increased substantially, it should be pointed out that the ERIC clearinghouses themselves were not designed, nor are they funded, with exception of a small number, to provide extensive reference services on-site.

Document Sales and Distribution

10. A cost-benefit-effectiveness study is needed of the ERIC document sales and distribution activity, including but not limited to EDRS, to determine whether present sales distribution policies and practices are an inhibiting influence to ready access to ERIC documents.

A number of aspects of document sales distribution need to be considered:

1) Methods of payment for orders should include a coupon-deposit system. This would reduce the cost of ordering and distribution and remove a basic irritant to purchasers who at present must send payment, sometimes not readily known, to accompany orders under $10.00.

2) Telephone requests followed by written orders should be accepted under emergency conditions.

3) A twenty-four hour turnaround time on orders for documents on the shelf should be maintained. Interim answers to all requests not so handled should be forwarded within 48 hours. Numerous reports of long delays in handling document orders point to a serious inhibiting influence to repeat orders.

4) Documents announced in *RIE* should be reproduced in anticipated quantities (see No. 5 below) by the time the *RIE* subscriber sends his order.

5) Customer "demand" models should be established for estimating numbers of different types of documents to be ordered, based on prior experience. This would improve order response time and reduce costs for full size copies. The linear regression "demand estimate equation" developed for NTIS is an example.

6) The apparent high cost of hard copy ($3.29 per 100 pages) should also be reviewed in terms of a maximum distribution/minimum cost equation.

The present practice of selling a number of reports and series at GPO' when similar reports are sold through EDRS was reported to be confusing by a number of users. This confusion is compounded when certain titles such as the PREP reports are published at GPO but are not announced in *RIE* or made available through EDRS until three months later. This is difficult to understand, except as a possible GPO requirement, for reports whose currency is a matter of importance.

The concept of "one-stop" information centers should be applied as well to Central ERIC, which sells its documents, special reports, audio-visual materials, and tapes through at least four different outlets.

In the interest of providing expedited and more effective reports distribution at lower cost, it is recommended that ERIC investigate possible alternatives for direct distribution of reports by means of SDI systems, both directly to individual users and through State and local agencies.

Document Selection and Input

11. Inferences that can be drawn from user reaction to document selection and input to the ERIC system strongly support the need for feedback on the selection process which will indicate how effectively the present system is working.

This could be accomplished in several ways, primarily through regular reporting by the ERIC Processing and Reference Facility to the clearinghouses on what kinds of documents are being requested and possibly including lists of best sellers by titles. Another method would be to compile perhaps quarterly a cumulative list of documents sold (by ED No.) which would be furnished the clearinghouses for their review. Each clearinghouse would

thus be able to determine how well its document input to the ERIC system was received as reflected by user demand requests. Another method would be to circulate quarterly a sample query to users of the standing order collections saying in effect "tell us which documents made available are most useful and conversely, tell us what kinds of documents not appearing in the ERIC system are desired." To the extent possible, State departments of education and State, regional and local information centers should also be enlisted in the feedback effort in order that it be as representative as possible.

12. Policies and procedures underlying growth of the ERIC document collection should be studied in relation to the most effective use of this knowledge base.

This study should involve not only acquisition of documents, including evaluation and selection, but also an assessment of the relative size and scope of the collection in terms of the expressed needs of the various and diverse educational communities. At the present time the archival side of ERIC appears to be steering a middle course, utilizing a limiting growth factor of about 1,000 documents per month, which are announced in *Research in Education* and made available to all potential users. For some highly motivated users this limitation appears too stringent and they would be satisfied by application only of gross negative selection criteria such as overall relevance, minimum technical quality, and non-duplicative content. At the other extreme some users refer to what they believe is a large amount of "trash" and redundancy in the ERIC documents collection. In general, these users feel that a more careful screening would eliminate large numbers of marginally useful documents accepted under current policy and selection criteria. The result would be a reduction of the file to one-half or one-third of its present size and rate of growth.

Given the assumption that ERIC is a practitioner-oriented system, there is little evidence that the present size of the collection inhibits use by the local practitioner, considering also the growth of numerous other forms of synthesis and evaluation available to him. What needs to be studied is the development of a collection policy which will recognize on the one hand the needs of those who wish to have the entire knowledge base encompassed, which the present ERIC policy appears to support, and on the other hand the needs of those who wish to have in their information system only highly selected and evaluated (cf. refereed) documents.

In order to provide an educational knowledge base that will satisfy the broad spectrum of diverse educational interests, the ERIC system would need to restructure its present announcement and distribution practices. The present practice of large-scale collection of documents and their announcement in a general abstract journal such as *RIE* however, is not inconsistent with the provision of special announcements partitioned by educational categories and also stratified by levels of significance of current educational practice. The study should consider this option for development of a range of document-information delivery systems targeted to particular user communities.

Indexing and Abstracting

13. Based on data obtained from numerous sources identified in this report, there is a need for regular feedback on the quality of indexing performed by the clearinghouses.

This concerns particularly how the indexing is used for searching and for the development of search strategies, both manual and machine. Appropriate mechanisms probably could take the form of periodic meetings between information center managers and clearinghouse directors or indexing personnel. Clearinghouses have the option of adding identifiers and of proposing new or revised terms for improvement of the *Thesuarus*. There is missing, however, an essential input from libraries and information centers, reflecting actual user reactions which periodically should be in open exchange with those who have responsibility for indexing.

14. The twin dilemmas of rising costs and overlapping coverage among abstracting and indexing journals need to be further studied in the field of education.

Data developed by this study present convincing evidence that educational agencies, libraries, and information centers in the face of rising costs are confronted increasingly with a choice of subscribing to one or two but not all three of the major indexing journals. The cost for institutions of subscribing to all three journals currently totals $126.00 with *CIJE* alone accounting for three-fifths of this cost. Considering that *Education Inde:* has a long and entrenched use among local schools and libraries, there appears to be a developing trend among institutions to cut back subscriptions to indexing journals on the basis of cost considerations. This is not likely to influence greatly the number of subscribers to *RIE*, but may already have established a plateau for *CIJE*. This is of course a complicated problem and should not be over-simplified by this survey. Further study, including a search for a better price/distribution formula, needs to be undertaken.

Information Analysis Products

15. A systematic program should be implemented to inform the educational community of the highly useful information analysis products prepared by ERIC clearinghouses and other components.

There is clear evidence in this study that these summary publicationsare not reaching the large non-research audience for which they are intended ad for which users report a great need. The promotion and dissemination of these specially prepared materials should be planned to exploit all possible secondary distribution systems such as State education agencies and other cooperating organizations, including professional associations, which woul themselves undertake large-scale free distribution of low-cost items on th basis of potential interest. Direct, targeted distribution of information analysis products should also be undertaken when appropriate, possible on a user-subject basis. The following suggestions are offered as examples of needed actions:

1) *Announcements* of new ERIC summary publications should be brief, attractively formatted, and *furnished* as a *giveaway* to all organizations

providing service on ERIC publications. Consideration should also be given to an SDI-type announcement sheet targeted to the needs of specific non-research audiences.

2) *Brief, regular announcements* of new information analysis products might well follow the practice of the Superintendent of Documents (GPO) in its bi-weekly publication of *Selected U. S. Government Publications*. Clearinghouses should also step up their announcement activities. The last few pages in *RIE* are not an effective way to help users stay abreast of new ERIC developments.

3) Dual sales distribution of information analysis products via both the Superintendent of Documents (GPO) and EDRS may in some cases be desirable to provide maximum visability and availability. Simultaneous announcement of availability, however, should be made to avoid confusion of potential ERIC users, as may be the case now with the PREP (Putting Research into Educational Practice) reports which are currently withheld three months from announcement in *RIE* following their publication by GPO. Consideration should also be given to *sales distribution of GPO-printed copies by EDRS*. (See also the Recommendation No. 10 relating to document sales and distribution activity.)

16. Two principal types of interpretative summaries should be developed to handle the full range of relevant publics involved:

1) Technical syntheses of research findings for research and university groups.

2) A modification of the technical syntheses to make them more concise, more attractive, and in terms that non-research, local school publics can comprehend. Neither of these types of reports considered alone can do the entire job.

17. New schemes for creative synthesis of facts and ideas appearing in the educational literature should be identified and promoted.

Continued proliferation of the educational literature, together with increased capability for storage of material of limited or special interest, will handicap the practitioner and researcher alike in their efforts to extract useful information relative to their particular interests. As the literature grows in volume and complexity, whether in report form or in journal articles, special methods need to be developed to make retrieval more meaningful than what can be achieved by subject classification and indexing alone. A step that has often been proposed is to strengthen substantially the review function in the information system. This function, however, should not be merely expanded, it must be radically revised and improved.

18. ERIC policy for the support of information analysis products should be re-examined in relation to other means for improving educational communication.

Creative synthesis and compaction of facts and ideas are central to improved communication of research results, but this emphasis on one element of the information flow process should be coordinated with efforts to improve the very beginning of the information cycle, i.e., the generation of information.

Indeed, there is increasing evidence that the great "distill or drown" philosophy will provide only a partial solution to the transfer of meaning as distinct from document delivery.

Interpretive summaries, reviews, digests and other information analysis products are expensive, difficult to prepare, and frequently unread. However, if new means of compression of the literature were developed more closely in relation to greater effectiveness in the generation of information, the communication of educational information could be facilitated without, in any way, impeding the origination of new ideas. This would involve weeding out at the point of origin, by the author and sometimes with peer assistance, the trivial, duplicative and non-technical. The screening process could be based upon accepted criteria of novelty, with a de-emphasis on publication for its own sake. On the mechanical side, structure and modular reporting would need to be devised.

Microfiche Use

19. There is a need for a test of the hypothesis, advanced by some, that local school people are not telling the truth when a high proportion indicate as in this study that they regularly use the microfiche mode--that they are reacting in such as way as to produce a more favorable image of themselves.

This is a phenomenon familiar to those who conduct user studies by questionnaire, sometimes borne out on closer examination and sometimes not. A brief, in-depth study, followed up by on-the-spot interviews and investigation, should be sufficient to prove or disprove this allegation, which is common wherever heavy use of microfiche is reported. It is the judgment of this study, using supplemental information from site visits, panel members, and anecdotal information, that the responses of local school people to this part of the individual user questionnaire are accurately reported.

Strengthening Dissemination

20. A cost-benefit-effectiveness study should be undertaken to determine the most effective and economical methods of announcing ERIC products and services to the large and diverse educational communities.

There is evidence demonstrated by this study that principal reliance upon traditional abstracting and indexing journals, i.e., *CIJE* and *RIE* has diminishing effectiveness in reaching individual users directly or indirectly through libraries and information centers. Additionally, data presented by this study reveal two underlying trends that need to be reversed: (a) almost three-fourths of readers of professional journals containing ERIC columns reported lack of convenient access to the three major abstracting and indexing journals in education and (b) the numbers of subscribers to *CIJE* and *RIE* have not only peaked in the past year but have actually declined over December 1969 levels. It is clear that additional means with wider impact need to be developed for announcing ERIC products and services to users and potential users. Among alternatives or additional mechanisms which need to be explored are SDI systems, separate sectional (partitioned) publication and distribution of the index journals to specific target populations.

expansion of machine searching services, educational programs both at the undergraduate level and among non-using professional groups, etc. Particular aspects of this recommendation are detailed under dissemination practices.

21. Large-scale development of educational programs should be carried out to teach users about educational information resources.

This and other recent studies have convincingly demonstrated that large segments of the educational community do not make use of national information services including ERIC, and, indeed, are largely unaware of the existence of these resources. Some educators, while aware of the existence of ERIC services and products, do not use them because of misconceptions relating to their true capabilities and do not exploit them to full advantage. Training seminars directed to managers of libraries and educational information centers, while valuable to center operations, have limited impact upon the educational community as a whole. To have any significant effect, a training program must be capable of hitting a substantial part of the user community. What is really needed are educational programs to teach users and potential users at all levels about ERIC and related information systems, their capabilities and limitations, and how to use these resources most effectively.

The need for education of users of information services has been recognized for some time. In 1963 the President's Science Advisory Committee recommended that schools and colleges should develop programs to teach students how to exploit the literature to fullest advantage. What was needed then for scientists and technologists is certainly needed today as the number of educators multiply and educational knowledge and practice increase in extension and intension. User education should begin at the undergraduate level, with additional research on the relationship between the most efficient use of the current knowledge base in education and the development of more effective educational programs.

22. More attention needs to be given to the role of librarians and information center members in the continuing efforts to make ERIC materials more visible.

Librarians and information center members are, first, knowledgeable of ERIC products and services; and, secondly, are important intermediaries between users and ERIC materials. There are professional groups in the American Library Association, including its American Association of School Librarians Division, the American Society for Information Science, and the Special Library Association which should be utilized for mobilizing professional librarians in the development of a systematic and widespread program for increasing the dissemination of information about ERIC.